

priority # 1

Access DB# 166579<sup>2</sup>

# SEARCH REQUEST FORM

Scientific and Technical Information Center

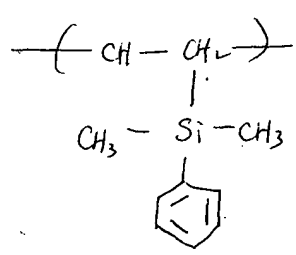
Requester's Full Name: Sm J. Lee Examiner #: 176060 Date: 9-20-05  
Art Unit: 1752 Phone Number 302-7333 Serial Number: 101800, 195  
Mail Box and Bldg/Room Location: 9060 Results Format Preferred (circle): PAPER DISK E-MAIL  
(Rem.)

If more than one search is submitted, please prioritize searches in order of need.  
\*\*\*\*\*  
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Plz. See Bib. SCIENTIFIC REFERENCE BR  
Inventors (please provide full names): \_\_\_\_\_ Sci & Tech Inf. Cntr.  
SEP 22 REC'D

Earliest Priority Filing Date: \_\_\_\_\_ Pat. & T.M. Office  
\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for a resist composition containing  
Silicon-containing resist polymer having following formula



directly phenyl vinyl silane monomer unit



STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>ROS</u>	NA Sequence (#) _____	STN <u>✓</u>	
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____	
Searcher Location: _____	Structure (#) <u>✓</u>	Questel/Orbit _____	
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____	
Date Completed: <u>10/3/05</u>	Litigation _____	Lexis/Nexis _____	
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____	
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____	
Online Time: <u>156</u>	Other _____	Other (specify) _____	



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Bib Data Sheet

CONFIRMATION NO. 8744

SERIAL NUMBER 10/800,195	FILING DATE 03/12/2004  RULE	CLASS 430	GROUP ART UNIT 1752	ATTORNEY DOCKET NO. 5347.218
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## APPLICANTS

Junyan Dai, Ithaca, NY;

Christopher K. Ober, Ithaca, NY;

Lin Wang, Baton Rouge, LA; Franco Cerrina, Madison, WI;

Paul Nealey, Madison, WI;

## \*\* CONTINUING DATA \*\*\*\*\*

This appln claims benefit of 60/454,062 03/12/2003

SJL

## \*\* FOREIGN APPLICATIONS \*\*\*\*\*

None SJL

IF REQUIRED, FOREIGN FILING LICENSE GRANTED

\*\* 05/28/2004

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	STATE OR COUNTRY NY	SHEETS DRAWING 10	TOTAL CLAIMS 64	INDEPENDENT CLAIMS 8
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance				
Verified and Acknowledged  Examiner's Signature <i>[Signature]</i> Initials <i>SJL</i>				

## ADDRESS

20792

MYERS BIGEL SIBLEY &amp; SAJOVEC

PO BOX 37428

RALEIGH, NC

27627

## TITLE

Organoelement resists for EUV lithography and methods of making the same

## FILING FEE

FEES: Authority has been given in Paper  
 No. \_\_\_\_\_ to charge/credit DEPOSIT ACCOUNT

☐ All Fees☐ 1.16 Fees ( Filing )☐ 1.17 Fees ( Processing Ext. of time )



# STIC Search Results Feedback Form

**EIC17000**

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader  
571/272-2505 REMSEN 4B28

## Voluntary Results Feedback Form

- I am an examiner in Workgroup:  Example: 1713  
➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

=> file reg

FILE 'REGISTRY' ENTERED AT 15:35:29 ON 03 OCT 2005  
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FILE 'REGISTRY' ENTERED AT 13:19:10 ON 03 OCT 2005

L24 18 SEA ABB=ON PLU=ON 1125-26-4/CRN  
D SCAN  
L25 11 SEA ABB=ON PLU=ON 97822-60-1/CRN  
L26 29 SEA ABB=ON PLU=ON L24 OR L25  
L27 29 POLYLINK L26

FILE 'HCAPLUS' ENTERED AT 14:31:22 ON 03 OCT 2005

L35 1534659 SEA ABB=ON PLU=ON (RESIST? OR LITHOG?)  
L36 22 SEA ABB=ON PLU=ON L27 AND L35

FILE 'REGISTRY' ENTERED AT 15:03:42 ON 03 OCT 2005

D SAV  
SAV L27 LEE195B/A

FILE 'REGISTRY' ENTERED AT 15:35:29 ON 03 OCT 2005

=> d l27 que stat

L24 18 SEA FILE=REGISTRY ABB=ON PLU=ON 1125-26-4/CRN  
L25 11 SEA FILE=REGISTRY ABB=ON PLU=ON 97822-60-1/CRN  
L26 29 SEA FILE=REGISTRY ABB=ON PLU=ON L24 OR L25  
L27 29 SEA FILE=REGISTRY POLYLINK L26

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 15:36:40 ON 03 OCT 2005  
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=> d l36 1-22 cbib abs hitstr hitind

L36 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
2004:1036532 Document No. 142:45894 **Resists** for EUV  
**lithography** comprising silicon and boron-containing  
polymers. Dai, Junyan; Ober, Christopher K.; Wang, Lin; Cerrina,  
Franco; Nealey, Paul (USA). U.S. Pat. Appl. Publ. US 2004241574 A1  
20041202, 24 pp. (English). CODEN: USXXCO. APPLICATION: US  
2004-800195 20040312. PRIORITY: US 2003-PV454062 20030312.  
AB **Resist** compns. contg. silicon, boron, or both silicon and  
boron may be used with ultra-violet lithog. processes and  
extreme ultra-violet (EUV) lithog. processes to increase  
the reactive ion etch **resistance** of the **resist**  
compns., improve transmission of the **resist** materials, and  
to dope substrates.  
IT 97822-61-2P 557099-43-1P,  
Dimethylphenylvinylsilane-isoprene block copolymer  
803688-07-5P, Isoprene-trimethylsilylstyrene block copolymer

*PRE-APP.*

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(resists for EUV lithog. comprising silicon  
and boron-contg. polymers)

RN 97822-61-2 HCAPLUS

CN Silane, (ethenylphenyl)trimethyl-, polymer with  
(chloromethyl)ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

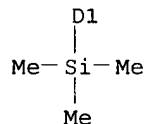
CRN 97822-60-1

CMF C11 H16 Si

CCI IDS



D1-CH=CH<sub>2</sub>



CM 2

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



D1-CH<sub>2</sub>-Cl

D1-CH=CH<sub>2</sub>

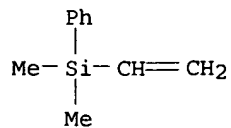
RN 557099-43-1 HCAPLUS

CN Silane, ethenyldimethylphenyl-, polymer with 2-methyl-1,3-butadiene,  
block (9CI) (CA INDEX NAME)

CM 1

CRN 1125-26-4

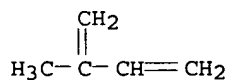
CMF C10 H14 Si



CM 2

CRN 78-79-5

CMF C5 H8



RN 803688-07-5 HCAPLUS

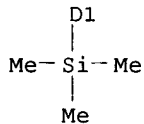
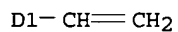
CN Silane, (ethenylphenyl)trimethyl-, polymer with 2-methyl-1,3-butadiene, block (9CI) (CA INDEX NAME)

CM 1

CRN 97822-60-1

CMF C11 H16 Si

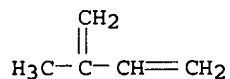
CCI IDS



CM 2

CRN 78-79-5

CMF C5 H8



IT 803688-09-7P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (resists for EUV lithog. comprising silicon and boron-contg. polymers)

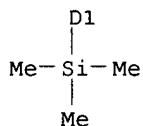
RN 803688-09-7 HCAPLUS  
 CN Phenol, ethenyl-, polymer with (ethenylphenyl)trimethylsilane (9CI)  
 (CA INDEX NAME)

CM 1

CRN 97822-60-1  
 CMF C11 H16 Si  
 CCI IDS



D1-CH=CH<sub>2</sub>



CM 2

CRN 31257-96-2  
 CMF C8 H8 O  
 CCI IDS



D1-OH

D1-CH=CH<sub>2</sub>

IC ICM G03C001-76  
 INCL 430270100  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 38  
 ST **resist EUV lithog** silicon boron polymer contg  
 IT 623-47-2, Ethyl propiolate 17702-41-9, Decaborane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of **resists** for EUV lithog. comprising  
 silicon and boron-contg. polymers)  
 IT 18178-04-6P 51999-28-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (prepn. of **resists** for EUV lithog. comprising  
 silicon and boron-contg. polymers)  
 IT 97822-61-2P 105729-79-1DP, Isoprene-styrene block

copolymer, reaction products with alkylsilanes, alkylphenylsilanes and borane derivs. 557099-43-1P, Dimethylphenylvinylsilane-isoprene block copolymer 803688-07-5P, Isoprene-trimethylsilylstyrene block copolymer 803688-08-6P  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(resists for EUV lithog. comprising silicon and boron-contg. polymers)

IT 766-77-8DP, Dimethylphenylsilane, reaction products with isoprene-styrene copolymer 12076-99-2DP, reaction products with isoprene-styrene block copolymer 51458-06-1DP, Dimesitylborane, reaction products with isoprene-styrene copolymer 803688-09-7P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(resists for EUV lithog. comprising silicon and boron-contg. polymers)

L36 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:799485 Document No. 139:108560 Organoelement resists for EUV lithography. Dai, Junyan; Ober, Christopher Kemper; Wang, Lin; Cerrina, Franco; Nealey, Paul F. (Mater. Sci. Eng., Cornell Univ., Ithaca, NY, 14853, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4690(Pt. 2, Advances in Resist Technology and Processing IX), 1193-1202 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Extreme-UV (EUV) lithog. is perhaps the most promising of the NGL technologies for sub-100 nm resoin. To address needs in this area, the authors designed and synthesized several types of organo-element resists using only low absorbing elements, including H, C, Si and B. One category is based on silicon-contg. block and random polymers. They show high transparency according to theor. simulations and have high oxygen reactive ion etch resistances compared to Novolak resins. In a preliminary study, the authors were able to image these polymers to 180 nm line/space patterns using EUV exposure. A second type of EUV transparent resist platform involves boron-contg. polymers. Carborane carboxylic acid was attached to a copolymer backbone to introduce boron atoms with controlled attachment level. It was found that incorporation of a small amt. of B provides remarkably high oxygen etch resistance.

IT 557099-43-1P, Dimethylphenylvinylsilane-isoprene block copolymer

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(synthesis and etch resistance of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)

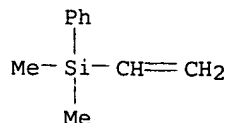
RN 557099-43-1 HCAPLUS

CN Silane, ethenyldimethylphenyl-, polymer with 2-methyl-1,3-butadiene, block (9CI) (CA INDEX NAME)

CM 1

CRN 1125-26-4

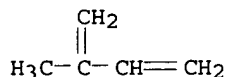
CMF C10 H14 Si



*Pub. date:  
July 2002.  
same Inventive  
entry*



CM 2

CRN 78-79-5  
CMF C5 H8

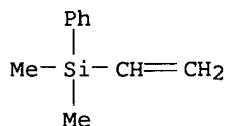
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST extreme UV lithog photoresist silicon boron contg polymer
- IT Polymers, properties  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (block; synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)
- IT X-ray resists  
 (design and properties of silicon-contg. block and random polymers and boron-contg. polymers for oxygen etch resistant resists for extreme-UV lithog. in relation to)
- IT Negative photoresists  
 (extreme-UV; design and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for oxygen etch resistant resists for extreme-UV lithog.)
- IT Photoresists  
 (extreme-UV; design and properties of silicon-contg. block and random polymers and boron-contg. polymers for oxygen etch resistant resists for extreme-UV lithog.)
- IT Optical transmission  
 (extreme-UV; synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)
- IT Etching  
 (plasma, resistance; synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)
- IT Hydroboration  
 Hydrosilylation  
 Polymer morphology  
 (synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)
- IT 557099-49-7  
 RL: PRP (Properties)  
 (comparison compd.; synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)
- IT 7782-44-7, Oxygen, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (plasma etch; synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)

- application)
- IT 557099-43-1P, Dimethylphenylvinylsilane-isoprene block copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (synthesis and etch **resistance** of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)
- IT 617-86-7DP, Triethylsilane, reaction product with isoprene-styrene block copolymer 758-21-4DP, Dimethylethylsilane, reaction product with isoprene-styrene block copolymer 766-77-8DP, Dimethylphenylsilane, reaction product with isoprene-styrene block copolymer 51458-06-1DP, Dimesitylborane, reaction product with hydrolyzed isoprene-styrene block copolymer 105729-79-1DP, Isoprene-styrene block copolymer, hydrosilylation and hydroboration products 122551-15-9P, 4-Pentamethyldisilylstyrene-p-chloromethylstyrene copolymer 557099-44-2P, p-Trimethylsilylstyrene-isoprene block copolymer 557099-45-3P, p-Trimethylsilylstyrene-p-chloromethylstyrene copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (synthesis and lithog. properties of silicon-contg. block and random polymers and boron-contg. polymers for extreme-UV lithog. resist application)
- IT 1009-43-4P, p-Trimethylsilylstyrene 114442-01-2P, 4-Pentamethyldisilylstyrene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of silicon-contg. block and random polymers and boron-contg. polymers for **resists** for extreme-UV lithog.)
- L36 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1997:650792 Document No. 127:319416 Manufacture of polysilane block copolymers by electrochemical polymerization. Nishida, Ryoichi; Kawasaki, Shinichi; Murase, Hiroaki (Osaka Gas Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09255785 A2 19970930 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-72332 19960327.
- AB The title method involves electrochem. polymn. using Mg (alloy) anodes, Li salt supporting electrodes, and nonprotonic solvents to give polymers bearing the units of (A) (SiR<sub>2</sub>)<sub>n</sub> (R = H, alkyl, aryl, alkoxy, silyl, amino) and (CH<sub>2</sub>CR<sub>1</sub>R<sub>2</sub>)<sub>l</sub> [I; R<sub>1</sub>, R<sub>2</sub> = H, (un)satd. alkyl, aryl, ester, silyl, ether, amino, CO<sub>2</sub>H, NO<sub>2</sub>, cyano, halo; l, n = 1-10,000] derived from X(SiR<sub>2</sub>)<sub>m</sub>X (II; m = 1-3) and H<sub>2</sub>C:CR<sub>1</sub>R<sub>2</sub> (III), resp.; (B) (RSi)<sub>p</sub> (p = 10-10,000) and I derived from RSiX<sub>3</sub> (IV) and III; (C) (SiR<sub>2</sub>)<sub>r</sub>(SiR)<sub>s</sub>(Si)<sub>t</sub> (r + s + t = 10-10,000) and I derived from II, III, IV, and SiX<sub>4</sub>. Thus, 10 mmol II (R = Me; X = Cl, m = 1) and 2 mmol styrene were electrochem. polymd. at room temp. and 1.8 F/mol (based on Cl in II) for 34 h in 15 mL THF contg. 0.4 g LiCl using a Mg anode and a SUS 304 cathode to give a block copolymer with wt.-av. mol. wt. 12,800, which was dissolved in PhMe and applied on an Al substrate to give a film showing high mech. strength and abrasion **resistance**.
- IT 197797-16-3P  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (manuf. of polysilane block copolymers from dihalosilanes and vinyl monomers by electrochem. polymn.)
- RN 197797-16-3 HCAPLUS  
 CN Silane, dichloromethylphenyl-, polymer with ethenyldimethylphenylsilane, block (9CI) (CA INDEX NAME)

CM 1

CRN 1125-26-4

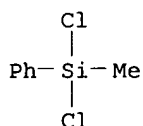
CMF C10 H14 Si



CM 2

CRN 149-74-6

CMF C7 H8 Cl2 Si



IC ICM C08G077-60

ICS C25B003-02

CC 35-7 (Chemistry of Synthetic High Polymers)

ST polysilane prepn electrochem polymn magnesium anode; halosilane vinyl monomer block polysilane; mech strength abrasion resistance block polysilane

IT Abrasion-resistant materials

(manuf. of polysilane block copolymers from dihalosilanes and vinyl monomers by electrochem. polymn.)

IT 143256-59-1P, Dichloromethylphenylsilane-styrene block copolymer  
 143256-60-4P, Dichloromethylphenylsilane- $\alpha$ -methylstyrene block copolymer  
 143256-63-7P, Cyclohexyldichloromethylsilane-styrene block copolymer  
 143292-88-0P, Dichloromethylphenylsilane-methyl methacrylate block copolymer  
 185693-22-5P, Dichlorohexylmethylsilane-styrene block copolymer  
 185693-23-6P, Dichloromethoxymethylsilane-styrene block copolymer  
 185693-25-8P, Dichlorophenyl(trimethylsilyl)silane-styrene block copolymer  
 185693-26-9P, Phenyltrichlorosilane-styrene block copolymer  
 185693-27-0P, 197797-11-8P, p-Anisylmethylsilane-styrene block copolymer  
 197797-12-9P, Dichloromethylphenylsilane-p-methylstyrene block copolymer  
 197797-13-0P, Butyl acrylate-dichloromethylphenylsilane block copolymer  
 197797-14-1P, Dichloromethylphenylsilane-dodecyl vinyl ether block copolymer  
 197797-15-2P, Dichloromethylphenylsilane-methyltrivinylsilane block copolymer  
 197797-16-3P, 197797-17-4P, 1,4-Cyclohexanedimethanol divinyl ether-dichloromethylphenylsilane block copolymer  
 197797-18-5P, Dichloromethylphenylsilane-vinyl acetate block copolymer  
 197797-19-6P, Dichloromethylphenylsilane-isoprene block copolymer  
 197797-20-9P, 197797-21-0P, Dichloromethylphenylsilane-N-vinylcarbazole block copolymer  
 197797-22-1P, Dichloromethylphenylsilane-4-vinylpyridine block copolymer  
 197797-23-2P, Dichloromethylphenylsilane-methyl methacrylate-styrene block copolymer

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(manuf. of polysilane block copolymers from dihalosilanes and vinyl monomers by electrochem. polymn.)

L36 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1995:557390 Document No. 122:299152 manufacture of fluorosilicone contact lenses having improved oxygen permeability and stain-

**resistance.** Kanya, Naotaka; Osanawa, Myuki; Tarumi, Yasuro  
(Menicon Co Ltd, Japan; Shinetsu Chemical Industry Co., Ltd.). Jpn.  
Kokai Tokkyo Koho JP 07064029 A2 19950310 Heisei, 12 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-207838 19930823.

AB Contact lenses having improved oxygen permeability and stain-  
**resistance** are prepd. with copolymers contg.  
[(Me)<sub>3</sub>SiO]<sub>3</sub>SiCH<sub>2</sub>CH<sub>2</sub>(CH<sub>2</sub>)<sub>n</sub>C[CF<sub>3</sub>]<sub>2</sub>OCOCRI:CH<sub>2</sub> [R<sub>1</sub> = H, Me; n = 0 or 1]  
as polymerizable components. Thus, the polymerizable component was  
treated with e.g. Me methacrylate and ethylene glycol dimethacrylate  
and the reaction product was made into contact lenses.

IT **163120-87-4P**  
RL: DEV (Device component use); SPN (Synthetic preparation); THU  
(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
(Uses)

(manuf. of fluorosilicone contact lenses with improved high  
oxygen permeability and stain-**resistance**)

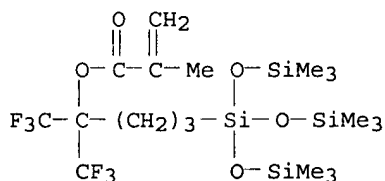
RN 163120-87-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediyl ester, polymer with  
1,1-bis(trifluoromethyl)-4-[3,3,3-trimethyl-1,1-  
bis[(trimethylsilyl)oxy]disiloxanyl]butyl 2-methyl-2-propenoate,  
(ethenylphenyl)trimethylsilane and 3-[3,3,3-trimethyl-1,1-  
bis[(trimethylsilyl)oxy]disiloxanyl]propyl 2-methyl-2-propenoate  
(9CI) (CA INDEX NAME)

CM 1

CRN 153146-73-7

CMF C19 H38 F6 O5 Si4



CM 2

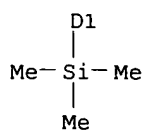
CRN 97822-60-1

CMF C11 H16 Si

CCI IDS

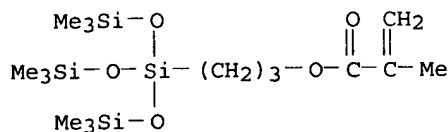


D1-CH=CH<sub>2</sub>



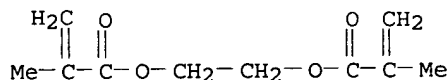
CM 3

CRN 17096-07-0  
CMF C16 H38 O5. Si4



CM 4

CRN 97-90-5  
CMF C10 H14 O4



IC ICM G02C007-04  
ICS C08F030-08

CC 63-7 (Pharmaceuticals)

IT Lenses

(contact, manuf. of fluorosilicone contact lenses with improved high oxygen permeability and stain-resistance)

IT Siloxanes and Silicones, biological studies

RL: DEV (Device component use); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(fluoro, copolymers contg.; manuf. of fluorosilicone contact lenses with improved high oxygen permeability and stain-resistance)

IT 163120-84-1P 163120-85-2P 163120-86-3P 163120-87-4P

163120-88-5P 163120-89-6P 163120-90-9P

RL: DEV (Device component use); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(manuf. of fluorosilicone contact lenses with improved high oxygen permeability and stain-resistance)

IT 7782-44-7, Oxygen, properties

RL: PRP (Properties)

(permeability; manuf. of fluorosilicone contact lenses with improved high oxygen permeability and stain-resistance)

L36 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1991:690955 Document No. 115:290955 Tert-Butoxycarbonyl maleimide copolymers for thermally stable deep UV resists by

chemical amplification. Ahn, Kwang Duk; Koo, Deok Il; Kim, Seong Ju (Funct. Polym. Lab., Korea Inst. Sci. Technol., Seoul, 130-650, S. Korea). Journal of Photopolymer Science and Technology, 4(3), 433-43 (English) 1991. CODEN: JSTEEW. ISSN: 0914-9244.

AB Three t-BOCMI [N-(tert-butyloxycarbonyl)maleimide] copolymers, P(t-BOCMI/St), P(t-BOCMI/SiSt) and P(t-BOCMI/t-BOCSt) and N-tert-butyloxycarbonyloxyphenylmaleimide copolymer, P(t-BOCPMI/SiSt), where St = styrene and SiSt = trimethylsilylstyrene, exhibited low absorbance at 248 nm in films of <0.2 μm thickness, high sensitivity, high thermal stability of generated image patterns above 200°, and high oxygen RIE (reactive ion etch) resistance. Deprotection of the t-BOC

group occurs at 150-200°, and eventual glass transition temp. Tg's are very high up to 250°. The polymers were compounded with triphenylsulfonium hexafluoroantimonate as photoacid generator to give resists named MIST, MISIX, BMIST, and PMISIX, resp. The resists were spin-coated, deep UV exposed and PEB (post exposure baked) at 100°. MIST and BMIST gave submicron pos. tone images with aq. alk. development in high sensitivity by chem. amplification. MISIX and PMISIX only generated neg. tone images with org. development.

IT 137828-74-1 137853-76-0

RL: USES (Uses)

(submicron lithog. resist compn. contg. photoacid generator and)

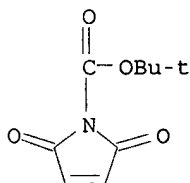
RN 137828-74-1 HCAPLUS

CN 1H-Pyrrole-1-carboxylic acid, 2,5-dihydro-2,5-dioxo-, 1,1-dimethylethyl ester, polymer with (ethenylphenyl)trimethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 114650-82-7

CMF C9 H11 N O4

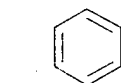


CM 2

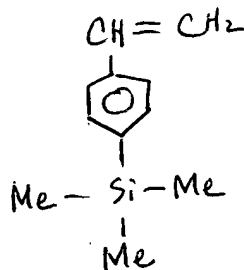
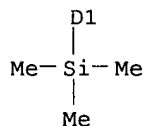
CRN 97822-60-1

CMF C11 H16 Si

CCI IDS



D1-CH=CH2



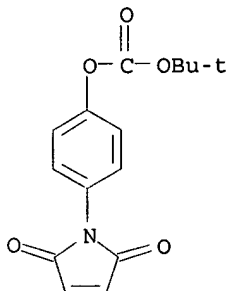
(present silylstyrene)

RN 137853-76-0 HCAPLUS

CN Carbonic acid, 4-(2,5-dihydro-2,5-dioxo-1H-pyrrol-1-yl)phenyl 1,1-dimethylethyl ester, polymer with (ethenylphenyl)trimethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 104469-25-2  
CMF C15 H15 N O5

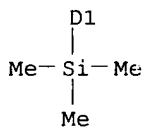


CM 2

CRN 97822-60-1  
CMF C11 H16 Si  
CCI IDS



D1-CH=CH<sub>2</sub>

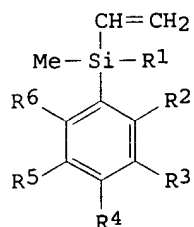


- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST submicron lithog butoxycarbonyl maleimide polymer; chem amplification resist butoxycarbonyl maleimide polymer
- IT **Resists**  
(photo-, polymeric, contg. butoxycarbonyl deprotection groups, for submicron lithog.)
- IT **Lithography**  
(submicron, photoacid generators for, polymers contg. butoxycarbonyl groups as)
- IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate  
RL: USES (Uses)  
(submicron lithog. photoresist compn. contg. photoacid generator of)
- IT 114650-83-8, N-(tert-Butoxycarbonyl)maleimide-styrene polymer  
137828-71-8 137828-74-1 137853-76-0  
RL: USES (Uses)  
(submicron lithog. resist compn. contg. photoacid generator and)

use 14/22  
instead

polymers. Takagi, Mikio; Oku, Junichi; Hasegawa, Takashi; Asami, Ryuzo (Japan Synthetic Rubber Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02263808 A2 19901026 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-84702 19890405.

GI



AB Polymers useful for manuf. of membranes, rubbers, electronic materials, and biomedical materials are prepd. by polymn. of I (R1 = C1-20 alkyl, C6-20 aryl; R2-6 = H, Me, Et). Thus, polymn. of 18.5 mmol dimethylphenylvinylsilane by 0.37 mmol BuLi and 0.39 mmol N,N,N',N'-tetramethylethylenediamine in 30 mL cyclohexane at 25° for 48 h gave a polymer having decompn. temp. 420°, wt.-av. and no.-av. mol.-wt. 8300 and 6500, resp.

IT 26744-16-1P

RL: PREP (Preparation)  
(prepn. of, heat-resistant)

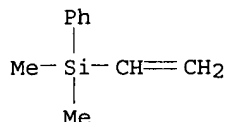
RN 26744-16-1 HCAPLUS

CN Silane, ethenyldimethylphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1125-26-4

CMF C10 H14 Si



IC ICM C08F030-08

ICS C08F004-46; C08G077-60

CC 35-4 (Chemistry of Synthetic High Polymers)

IT 26744-16-1P

RL: PREP (Preparation)  
(prepn. of, heat-resistant)

L36 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1990:207640 Document No. 112:207640 Effects of ion bombardment in oxygen plasma etching. Hartney, M. A.; Greene, W. M.; Soane, D. S.; Hess, D. W. (Dep. Chem. Eng., Univ. California, Berkeley, CA, 94720, USA). Proceedings of SPIE-The International Society for Optical Engineering, 920(Adv. Resist Technol. Process. 5), 108-19 (English) 1988. CODEN: PSISDG. ISSN: 0277-786X.

AB The relative roles of ion bombardment and O radicals were examd. for O plasma etching of common photoresists and Si-contg. resists. The degree of O disocn. in the plasma was measured as a function of power and pressure in the reactor. Etch rates for hydrocarbon resists increased with pressure over the range studied, although the ion bombardment energy and the flux



of O radicals decreased. This indicated that the supply of neutral O mols. is the limiting factor in the range of operating conditions (20-80 millitorr) typically found in reactive ion etching. The role of ion induced damage was small for std. **resist** etching, but it helped in the formation of an oxide layer during the etching of Si-contg. materials.

IT 104521-87-1  
 RL: USES (Uses)  
 (etching of **resist** film of, using oxygen plasma, ion bombardment effects in)

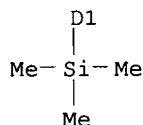
RN 104521-87-1 HCAPLUS  
 CN Silane, (ethenylphenyl)trimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 97822-60-1  
 CMF C11 H16 Si  
 CCI IDS



D1-CH=CH<sub>2</sub>



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Polyimides, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (plasma etching of **lithog. resists** of, effect of oxygen radicals and ion bombardment on)

IT **Resists**  
 (silicon-contg., oxygen plasma etching of, effect of oxygen radicals and ion bombardment on)

IT Phenolic resins, uses and miscellaneous  
 RL: USES (Uses)  
 (novolak, etching of **resist** film of, using oxygen plasma, effects of ion bombardment in)

IT **Resists**  
 (photo-, etching of, by oxygen plasma, effects of ion bombardment and radicals in)

IT 9003-53-6 104521-87-1  
 RL: USES (Uses)  
 (etching of **resist** film of, using oxygen plasma, ion bombardment effects in)

IT 7782-44-7D, Oxygen, ions, uses and miscellaneous  
 RL: USES (Uses)  
 (in etching of photoresists and silicon-contg. **resists** during oxygen plasma etching)

IT 17778-80-2, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in etching of photoresists and silicon-contg. **resists**)

during oxygen plasma etching)

IT 7782-44-7, Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(plasma, etching of photoresists and silicon-contg.

resists by, effect of ion bombardment and radicals in)

L36 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1990:149068 Document No. 112:149068 Positive-working

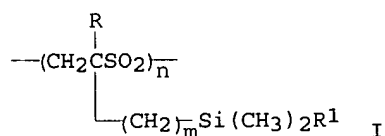
radiation-sensitive resist. Ban, Koji; Tanaka, Haruyori

(Nippon Telegraph and Telephone Corp., Japan). Jpn. Kokai Tokkyo

Koho JP 01187545 A2 19890726 Heisei, 5 pp. (Japanese). CODEN:

JKXXAF. APPLICATION: JP 1988-10739 19880122.

GI



AB A pos-working resist material with high sensitivity to high-energy beams and having high resistance to O plasma etching is a polysulfone having the general formula I [R = H, alkyl; R1 = tert-Bu, Ph; n ≥ 10; m = 0-5].

IT 125920-56-1

RL: USES (Uses)

(as radiation-sensitive pos.-working resist)

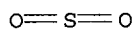
RN 125920-56-1 HCAPLUS

CN Silane, ethenyldimethylphenyl-, polymer with sulfur dioxide (9CI)  
(CA INDEX NAME)

CM 1

CRN 7446-09-5

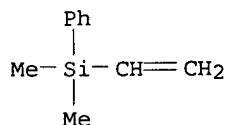
CMF O2 S



CM 2

CRN 1125-26-4

CMF C10 H14 Si



IC ICM G03C001-72

ICS H01L021-30

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

ST polysulfone radiation sensitive resist

IT Polysulfones, uses and miscellaneous  
 RL: USES (Uses)  
 (pos.-type radiation-sensitive **resists** from)

IT **Resists**  
 (radiation-sensitive, polysulfones as)

IT 125920-56-1 125920-57-2 125920-58-3 125920-60-7  
 125920-61-8 125920-63-0 125920-64-1 125920-66-3 125920-68-5  
 125920-70-9 125920-72-1 125920-74-3  
 RL: USES (Uses)  
 (as radiation-sensitive pos.-working **resist**)

L36 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1989:467742 Document No. 111:67742 Oxide formation during plasma  
 etching of silicon-containing **resists**. Hartney, M. A.;  
 Chiang, J. N.; Hess, D. W.; Soane, D. S. (Dep. Chem. Eng., Univ.  
 California, Berkeley, CA, 94720, USA). Applied Physics Letters,  
 54(16), 1510-12 (English) 1989. CODEN: APPLAB. ISSN: 0003-6951.

AB Surface modification during O plasma etching of  
 polytrimethylsilylmethylstyrene **resists** was monitored  
 using XPS. Plasma exposure converted the Si present in the polymers  
 to an oxidized surface region which prevented further chem. etching.  
 Conversion was more rapid and more complete when etching under  
 conditions where higher energy ion bombardment occurred.  
 Polysilylmethylstyrene reached a steady-state oxide thickness  
 between 3.4 and 5.8 nm, depending on etching conditions. A  
 copolymer of this material with chloromethylstyrene showed a  
 comparable thickness when etched at high ion energies, but did not  
 reach a steady state when etched at conditions where the av. ion  
 energy was <110 eV.

IT 97822-61-2 104521-87-1  
 RL: USES (Uses)  
 (**resist** from, oxygen plasma etching of)

RN 97822-61-2 HCAPLUS

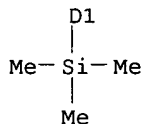
CN Silane, (ethenylphenyl)trimethyl-, polymer with  
 (chloromethyl)ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 97822-60-1  
 CMF C11 H16 Si  
 CCI IDS



D1-CH=CH<sub>2</sub>



CM 2

CRN 30030-25-2  
 CMF C9 H9 Cl

*Use 10/22  
 instead*

CCI IDS



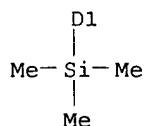
D1-CH<sub>2</sub>-Cl

D1-CH=CH<sub>2</sub>

RN 104521-87-1 HCAPLUS  
 CN Silane, (ethenylphenyl)trimethyl-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 97822-60-1  
 CMF C11 H16 Si  
 CCI IDS



D1-CH=CH<sub>2</sub>



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 66, 76  
 ST oxidn polysilylmethylstyrene **resist**; plasma etching polysilylmethylstyrene **resist**; chloromethylstyrene copolymer **resist**; oxygen plasma etching **resist**  
 IT **Resists**  
 (polytrimethylsilylmethylstyrene, oxygen plasma etching of)  
 IT Sputtering  
 (etching, of polytrimethylsilylmethylstyrene **resists** in oxygen)  
 IT Anodization  
 (plasma, of polytrimethylsilylmethylstyrene **resists** in oxygen)  
 IT Etching  
 (sputter, of polytrimethylsilylmethylstyrene **resists** in oxygen)  
 IT 7782-44-7, Oxygen, uses and miscellaneous  
 RL: PRP (Properties)  
 (etching of polytrimethylsilylmethylstyrene **resists** in plasma of)

IT 97822-61-2 104521-87-1

RL: USES (Uses)

(resist from, oxygen plasma etching of)

L36 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1989:66919 Document No. 110:66919 Silicon-containing

radiation sensitive **resist** for fabrication of

semiconductor devices. Leveriza, Carina T.; Morgan, Russell A. (Syn Labs, Inc., USA). U.S. US 4764247 A 19880816, 5 pp. (English).

CODEN: USXXAM. APPLICATION: US 1987-27422 19870318.

AB A radiation-sensitive **resist** which provides **resist** patterns with reduced erosion and improved plasma resiliency and is suited for fabrication of semiconductor devices is comprised of a copolymer prep. from a halomethylstyrene and an alkylsilylstyrene. A lithog. process for forming a **resist** pattern is comprised of the steps: (1) applying a layer of the **resist** onto a substrate; (2) irradiating the **resist** layer to x-rays or electron beams to form a neg. image; (3) developing the **resist** with a solvent; and (4) etching the **resist** pattern in a suitable plasma.

IT 97822-61-2

RL: USES (Uses)

(neg.-working radiation-sensitive **resists** from, for fabrication of semiconductor devices)

RN 97822-61-2 HCAPLUS

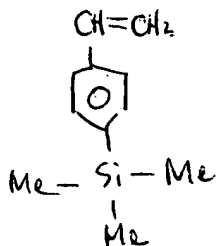
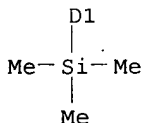
CN Silane (ethenylphenyl)trimethyl-, polymer with (chloromethyl)ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 97822-60-1

CMF C11 H16 Si

CCI IDS

D1-CH=CH<sub>2</sub>

CM 2

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



D1-CH<sub>2</sub>-Cl

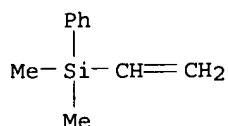
D1-CH=CH<sub>2</sub>

- IC ICM B44C001-22  
ICS B29C037-00; C03C015-00; C03C025-06  
INCL 156643000  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76  
ST radiation **resist** halostyrene alkylsilylstyrene copolymer; electron **resist** halostyrene alkylsilylstyrene copolymer; x ray **resist** halostyrene alkylsilylstyrene copolymer; neg **resist** halostyrene alkylsilylstyrene copolymer  
IT **Resists**  
(electron-beam, neg., from halomethylstyrene-alkylsilylstyrene copolymers)  
IT **Resists**  
(photo-, neg., from halomethylstyrene-alkylsilylstyrene copolymers)  
IT **Resists**  
(x-ray, neg., from halomethylstyrene-alkylsilylstyrene copolymers)  
IT 67-63-0, Isopropyl alcohol, uses and miscellaneous  
RL: USES (Uses)  
(developing solns. from iso-Bu Me ketone and, for neg.-working radiation-sensitive **resists** from halomethylstyrene-alkylsilylstyrene copolymer for semiconductor device prepn.)  
IT 108-10-1, Isobutyl methyl ketone  
RL: USES (Uses)  
(developing solns. from iso-Pr alc. and, for neg.-working radiation-sensitive **resists** from halomethylstyrene-alkylsilylstyrene copolymers for semiconductor device prepn.)  
IT 97822-61-2  
RL: USES (Uses)  
(neg.-working radiation-sensitive **resists** from, for fabrication of semiconductor devices)
- L36 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
1989:48602 Document No. 110:48602 Poly(triorganovinylsilanes) for optical disk substrates. Nagura, Shigehiro; Yamamoto, Akira (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63223012 A2 19880916 Showa, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-56492 19870313.  
AB Substrates for optical disks are composed mainly of a polymer of the formula [CH<sub>2</sub>CH(SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>)]<sub>n</sub> (R<sub>1</sub>-R<sub>3</sub> = C<sub>1</sub>-6 hydrocarbyl; n = ≥1000). Thus, poly(trimethylvinylsilane) (d.p. 8000) was pelletized and injection molded to give a substrate for an optical disk with transmittance 91%, wt. increase after 4 days in H<sub>2</sub>O at 25° of 0.05%, and heat distortion temp. of 155°, vs., 92, 0.30, and 100, resp., for poly(Me methacrylate).  
IT 26744-16-1  
RL: USES (Uses)  
(optical disk substrates, transparent, heat- and water-resistant)

RN 26744-16-1 HCAPLUS  
 CN Silane, ethenyldimethylphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1125-26-4  
 CMF C10 H14 Si



IC ICM C08F030-08  
 ICS G11B007-24  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST optical disk substrate vinylsilane polymer; polyvinylsilane optical disk substrate; heat **resistance** optical disk polyvinylsilane; transparent optical disk polyvinylsilane; water **resistance** optical disk polyvinylsilane  
 IT Vinyl compounds, polymers  
 RL: USES (Uses)  
 (silyl group-contg., transparent and **resistant** to heat and water, for optical disk substrates)  
 IT Recording apparatus  
 (optical disks, substrates for, transparent poly(vinylsilanes) with **resistance** to heat and water for)  
 IT 25036-32-2, Poly(trimethylvinylsilane) 26744-16-1 101901-97-7  
 RL: USES (Uses)  
 (optical disk substrates, transparent, heat- and water-**resistant**)

L36 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1988:631734 Document No. 109:231734 Preparation of high-molecular-weight transparent oxygen-permeable triorgano vinylsilane copolymers. Sakurada, Toyohisa; Takamizawa, Minoru; Mayuzumi, Tetsuya; Yamamoto, Akira; Nagura, Shigehiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63035614 A2 19880216 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-179574 19860730.

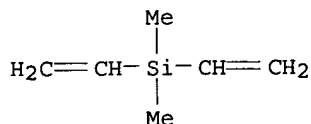
AB Title polymers with d.p.  $\geq 5000$  are prepd. by copolymn. of 99.99-99.50 mol%  $\text{CH}_2:\text{CHSiR}_1\text{R}_2\text{R}_3$  ( $\text{R}_1, \text{R}_2, \text{R}_3 = \text{C}_1\text{-6 hydrocarbyl}$ ) and 0.01-0.50 mol%  $(\text{CH}_2:\text{CH})_2\text{SiR}_4\text{R}_5$  ( $\text{R}_4, \text{R}_5 = \text{C}_1\text{-6 hydrocarbyl}$ ). Thus, 0.078 mL 15% hexane soln. of BuLi, 100 g  $\text{CH}_2:\text{CHSiMe}_3$  (I), and 0.22 g  $(\text{CH}_2:\text{CH})_2\text{SiMe}_2$  (II), were mixed 48 h at  $50^\circ$  under N to give 91 g I-II copolymer (wt.-av. mol. wt. 1,500,000, av. d.p. 15,000), which was dissolved in MePh, cast, and dried to form a transparent colorless film showing O permeability  $3.9 + 10^{-9} \text{ cm}^3$  (STP)-cm/cm<sup>2</sup>-s-cmHg (at  $25^\circ$ ), vs.  $4.0 + 10^{-9}$  for I homopolymer (wt. av. mo. wt. 420,000, av. d.p. 4200) film. I-II copolymer film showed 95.5% visible light transmission, similar to I homopolymer film.

IT 117674-35-8P, Dimethyldivinylsilane-dimethylphenylvinylsilane copolymer  
 RL: PREP (Preparation)  
 (prepn. of, high-mol.-wt., transparent, heat-**resistant**, oxygen-permeable)

RN 117674-35-8 HCAPLUS  
 CN Silane, diethenyldimethyl-, polymer with ethenyldimethylphenylsilane (9CI) (CA INDEX NAME)

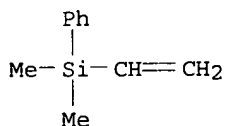
CM 1

CRN 10519-87-6  
CMF C6 H12 Si



CM 2

CRN 1125-26-4  
CMF C10 H14 Si



IC ICM C08F230-08  
CC 35-4 (Chemistry of Synthetic High Polymers)  
IT Transparent materials  
(vinylsilane copolymers with high mol.wt., oxygen-permeable, heat-resistant)  
IT Heat-resistant materials  
(vinylsilane copolymers with high mol.wt., oxygen-permeable, transparent)  
IT Membranes  
(permselective, oxygen-permeable, vinylsilane copolymers, with high mol. wt., transparent, heat-resistant)  
IT 117674-34-7P, Dimethyldivinylsilane-trimethylvinylsilane copolymer  
117674-35-8P, Dimethyldivinylsilane-dimethylphenylvinylsilane copolymer 117674-36-9P, Diethyldivinylsilane-dimethylpropylvinylsilane copolymer  
117674-37-0P, Diethyldivinylsilane-diethylmethylvinylsilane copolymer 117674-38-1P, Dimethyldivinylsilane-ethylmethylvinylsilane copolymer  
RL: PREP (Preparation)  
(prepn. of, high-mol.-wt., transparent, heat-resistant, oxygen-permeable)

L36 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1988:580442 Document No. 109:180442 Positive-working resist from multicomponent crosslinking-copolymer comprising sulfur dioxide and vinyl compound. Matsuda, Minoru; Ono, Hiroshi (Chisso Corp., Japan). Jpn. Kokai Tokkyo Koho JP 63000319 A2 19880105 Showa, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-142312 19860618.  
AB In the 1st invention, the title copolymer comprises 1-50 mol% SO<sub>2</sub> and 50-99 mol% vinyl compd. (trialkylsilylstyrene is excluded in case of a 2-component polymer; typically, chlorostyrene, chloromethylstyrene, acetoxystyrene, and hydroxystyrene), and the wt. av. mol. wt. thereof is 103-106. In the 2nd invention, the title copolymer (e.g., comprising 30-50 mol% SO<sub>2</sub> and 50-70 mol% vinyl compd. and having 5 + 104-106 wt. av. mol. wt.) has ≥1 monomer units (20-49 mol%) selected from (1) aliph. olefins and (2) ≥1 monomer units (1-30 mol%) selected from



arom. vinyl compds. or Si-contg. vinyl compds. 1-Butene, 2-Me-1-butene, and 2-Me-1-pentene are included in (1), and styrene, chlorostyrene, acetoxystyrene, hydroxystyrene, and trimethylallylsilane are included in (2). This copolymer is dry-etching **resistant**, and is useful as a pos.-working **resist** decomposable with electron and x-ray beams at high sensitivity.

IT 117137-58-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and use of, for pos.-working **resist** for  
electron and x-ray beams)

RN 117137-58-3 HCAPLUS

CN Silane, (ethenylphenyl)trimethyl-, polymer with 1-butene and sulfur dioxide (9CI) (CA INDEX NAME)

CM 1

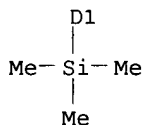
CRN 97822-60-1

CMF C11 H16 Si

CCI IDS



D1-CH=CH<sub>2</sub>



CM 2

CRN 7446-09-5

CMF O2 S

O=S=O

CM 3

CRN 106-98-9

CMF C4 H8

H<sub>3</sub>C-CH<sub>2</sub>-CH=CH<sub>2</sub>

IC ICM C08G075-22

ICS G03C001-72

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos working **resist** copolymer; electron beam **resist**  
copolymer; x ray **resist** copolymer; sulfur dioxide vinyl

compd copolymer

IT **Resists**  
 (pos.-working, for electron and x-ray beams, from copolymer comprising sulfur dioxide and vinyl compd.)

IT 117057-20-2P 117057-21-3P 117057-22-4P 117057-24-6P  
 117057-25-7P 117137-58-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and use of, for pos.-working resist for electron and x-ray beams)

L36 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1987:626008 Document No. 107:226008 Bilayer resist  
 composition. Saito, Kazumasa; Yoneda, Yasuhiro; Miyagawa, Masashi; Kawasaki, Yoko (Fujitsu Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62133450 A2 19870616 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1985-274001 19851205.

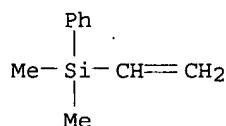
AB A bilayer resist employs as upper-layer resist a copolymer of a vinyl compd. and a vinylsilane deriv. having Si-attached C1-3 alkyl, Ph, or H. Fine patterns with high-resoln. and O plasma resistance are obtained from the resist compn. Thus, dimethylphenylvinylsilane-Me methacrylate copolymer (mol. wt. 3500) was coated on a Si wafer and sputter-etched to show excellent O plasma resistance.

IT 30024-30-7  
 RL: USES (Uses)  
 (bilayer resist from, oxygen plasma resistant)

RN 30024-30-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenyldimethylphenylsilane (9CI) (CA INDEX NAME)

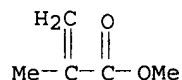
CM 1

CRN 1125-26-4  
 CMF C10 H14 Si



CM 2

CRN 80-62-6  
 CMF C5 H8 O2



IC ICM G03C001-71  
 ICS G03C001-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST bilayer resist oxygen plasma resistance;  
 vinylsilane methacrylate copolymer resist bilayer

IT **Resists**  
 (etch, bilayer, vinylsilane copolymer for oxygen plasma-resistant)

IT 30024-30-7

RL: USES (Uses)

(bilayer **resist** from, oxygen plasma **resistant**)

L36 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1987:599809 Document No. 107:199809 Plastic optical fibers.

Takamizawa, Minoru; Yamamoto, Akira; Nagura, Shigehiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62031808 A2 19870210 Showa, 3 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1985-170914 19850802.

AB Optical fibers with good heat **resistance** and low transmission loss contain the polysilanes  $[\text{CH}_2\text{CH}(\text{SiMeRR}_1)]_m$  (R, R<sub>1</sub> = Me, Et, Pr, Ph; m >1000) as cores and resin compns. with n lower than that of the core as sheaths. Thus, poly(trimethylvinylsilane) (mol. wt. 510,000) was extrusion coated with poly(vinylidene fluoride) to give 90:10 core-sheath fibers with transmission loss 350 and 370 dB/km (660 nm) after 0 and 5 h, resp., at 120°.

IT 26744-16-1, Poly(dimethylphenylvinylsilane)

RL: USES (Uses)

(cores for optical fibers, heat-**resistant** with low transmission loss)

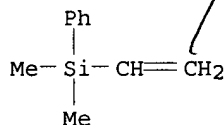
RN 26744-16-1 HCAPLUS

CN Silane, ethenyl(dimethylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1125-26-4

CMF C10 H14 Si



IC ICM G02B006-10

ICA C08F030-08

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 73

IT Optical fibers

(vinylsilane polymer cores-poly(vinylidene fluoride) sheaths, heat-**resistant** with low transmission loss)

IT 25036-32-2, Poly(trimethylvinylsilane) 26744-16-1,

Poly(dimethylphenylvinylsilane) 101901-97-7,

Poly(dimethylethylvinylsilane)

RL: USES (Uses)

(cores for optical fibers, heat-**resistant** with low transmission loss)

IT 24937-79-9, PVDF

RL: USES (Uses)

(sheaths for optical fibers, heat-**resistant** with low transmission loss)

L36 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

1987:587477 Document No. 107:187477 Bilayer **resist**

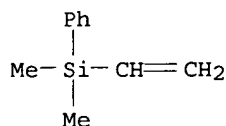
composition. Saito, Kazumasa; Yoneda, Yasuhiro; Miyagawa, Masashi; Kawasaki, Yoko (Fujitsu Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62133445 A2 19870616 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1985-274002 19851205.

AB The upper-layer **resist** compn. for a bilayer **resist** compn. is prepd. by mixing a conventional **resist** with a poly(vinylsilane) obtained by the mol. wt.-controlled anion polymn.

→ use 14/22

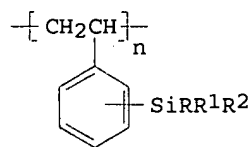
of a vinylsilane possessing Si-Cl-3 alkyl, Si-phenyl, or Si-H bonds. Fine patterns with high-resoln. and O plasma-resistance are obtained from the resist compn. Thus, a mixt. of poly(dimethylphenylvinylsilane) (mol. wt. 5800), poly(hexafluorobutyl methacrylate), and FMB 110 was coated on a Si wafer and sputter-etched to show excellent O plasma resistance.

IT 26744-16-1, Dimethylphenylvinylsilane polymer  
 RL: USES (Uses)  
 (bilayer resist from, for oxygen plasma resistance)  
 RN 26744-16-1 HCAPLUS  
 CN Silane, ethenyldimethylphenyl-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 1125-26-4  
 CMF C10 H14 Si



IC ICM G03C001-00  
 ICS G03C001-00; G03C001-71; G03F007-00  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST bilayer resist oxygen plasma resistance;  
 polyvinylsilane bilayer resist etch; anion polymn  
 vinylsilane resist bilayer  
 IT Resists  
 (etch, bilayer, poly(vinylsilane) deriv. for oxygen plasma-resistant high-resoln.)  
 IT 26744-16-1, Dimethylphenylvinylsilane polymer  
 RL: USES (Uses)  
 (bilayer resist from, for oxygen plasma resistance)  
 L36 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1987:449575 Document No. 107:49575 Radiation-sensitive compositions and their use. Watanabe, Fumitake (NEC Corp., Japan). Jpn. Kokai Tokkyo Koho JP 61221745 A2 19861002 Showa, 4 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1985-62418 19850327.

GI



I

AB A radiation-sensitive compn. comprises a compd. of the formula I (R-R2 = lower alkyl; n = pos. integer) and a chloromethylated styrene polymer. Fine patterns are prepd. by placing a layer of the compn. on a substrate having an org. polymer layer, irradiating with ionizing radiation, e.g., x-rays or electron beams, to form a pattern, and dry etching the org. polymer layer using the pattern as

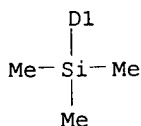
Use  
 4764247

a resist. The compn. shows high sensitivity to radiation and dry-etching resistance. Some 0.5 g poly(trimethylsilylstyrene) (wt.-av. mol. wt. 112,000; no.-av. mol. wt. 107,000) and 0.05 g poly(chloromethylstyrene) (wt.-av. mol. wt. 20,000) were dissolved in 8 mL xylene, coated on a Si substrate to form a 0.34- $\mu$  layer, prebaked at 100° for 30 min under N, and irradiated with an electron beam to show good sensitivity as a resist material.

IT 104521-87-1  
 RL: USES (Uses)  
 (electron-beam resists from poly(chloromethylated styrene) and)  
 RN 104521-87-1 HCAPLUS  
 CN Silane, (ethenylphenyl)trimethyl-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 97822-60-1  
 CMF C11 H16 Si  
 CCI IDS



D1-CH=CH<sub>2</sub>



IC ICM G03C001-71  
 ICS G03C005-00; G03F007-00; H01L021-30  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST polytrialkylsilylstyrene radiation sensitive resist;  
 polychloromethylstyrene radiation sensitive resist  
 IT Resists  
 (electron-beam, from poly(trialkylsilylstyrene) and chloromethylated styrene polymer)  
 IT Resists  
 (x-ray, from poly(trialkylsilylstyrene) and chloromethylated styrene polymer)  
 IT 104521-87-1  
 RL: USES (Uses)  
 (electron-beam resists from poly(chloromethylated styrene) and)  
 IT 9080-67-5  
 RL: USES (Uses)  
 (electron-beam resists from poly(trimethylsilylstyrene) and)  
 L36 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1986:543409 Document No. 105:143409 Lithographic approach  
 for 100 nm fabrication by focused ion beam. Matsui, Shinji; Mori, Katsumi; Saigo, Kazuhide; Shiokawa, Takao; Toyoda, Koichi; Namba,

Susumu (Fundam. Res. Lab., NEC Corp., Miyazaki, 213, Japan).  
 Journal of Vacuum Science & Technology, B: Microelectronics and  
 Nanometer Structures, 4(4), 845-9 (English) 1986. CODEN: JVTBD9.  
 ISSN: 0734-211X.

- AB A bilevel **resist** process using poly(trimethylsilylstyrene-chloromethylstyrene) (I) **resist** as a top layer was developed for Ga<sup>+</sup> focused ion beam (FIB) **lithog.** A 100 nm linewidth pattern with 750 nm thickness was obtained. **Lithog.** characteristics for 100 kV Ga<sup>+</sup> FIB were studied for PMMA pos. **resist** and I neg. **resist**. The results indicate that backscattering and proximity effects are negligible and that 100 kV Ga<sup>+</sup> FIB **resist** sensitivity is .apprx.100 times larger than that for 20 kV electron beam. Moreover, discontinuous lines, which may be caused by shot noise or by an oscillation at the end of the Taylor cone of the Ga ion source, are produced at low dose for both **resists**.
- IT 97822-61-2  
 RL: USES (Uses)  
 (lithog. bilevel **resist** process using, for gallium ion focused ion beam lithog., 100 nm linewidth patterns fabrications in)
- RN 97822-61-2 HCAPLUS  
 CN Silane, (ethenylphenyl)trimethyl-, polymer with (chloromethyl)ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

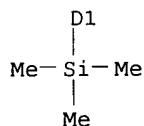
CRN 97822-60-1

CMF C11 H16 Si

CCI IDS



D1-CH=CH<sub>2</sub>



CM 2

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



D1-CH<sub>2</sub>-Cl

D1-CH=CH<sub>2</sub>

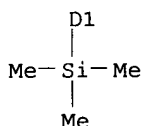
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST ion **lithog** trimethylsilylstyrene chloromethylstyrene polymer; **resist** bilevel silicon contg polymer
- IT **Resists**  
(ion beam, bilevel system with silicon-contg. polymer top layer, for gallium focused ion beam exposure)
- IT **Lithography**  
(ion-beam, using focused gallium ions, fabrication of 100 nm patterns in)
- IT 15091-79-9, uses and miscellaneous  
RL: USES (Uses)  
(focused ion beam **lithog.** using, bilevel **resist** system for, with silicon-contg. top **resist** layer)
- IT 9011-14-7  
RL: USES (Uses)  
(**lithog.** approach for 100 nm fabrication by focused ion beam using)
- IT 81458-15-3  
RL: USES (Uses)  
(**lithog.** bilevel **resist** process using silicon-contg. **resist** as top layer and, for focused gallium ion beam exposures, fabrication of 100 nm patterns in)
- IT 97822-61-2  
RL: USES (Uses)  
(**lithog.** bilevel **resist** process using, for gallium ion focused ion beam **lithog.**, 100 nm linewidth patterns fabrications in)
- IT 7440-21-3, uses and miscellaneous 7440-57-5, uses and miscellaneous  
RL: USES (Uses)  
(support, bilevel **resist** process using silicon-contg. **resist** as top layer and support from, for gallium focused ion beam **lithog.**, fabrication of 100 nm patterns in)
- L36 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
1986:543387 Document No. 105:143387 A 2-layer **resist** system derived from trimethylsilylstyrene. MacDonald, S. A.; Allen, R. D.; Clecak, N. J.; Willson, C. G.; Frechet, J. M. J. (Almaden Res. Cent., IBM, San Jose, CA, 95120-6099, USA). Proceedings of SPIE-The International Society for Optical Engineering, 631(Adv. Resist Technol. Process. 3), 28-33 (English) 1986. CODEN: PSISDG. ISSN: 0277-786X.
- AB A neg. deep-UV photoresist for a bilevel **resist** system comprised an O etch plasma **resistant** matrix poly(trimethylsilylmethylstyrene) and a monomeric radical generator trichlorobenzene (I) or 3,3'-diazidodiphenylsulfane (II). The formation contg. 20% I was coated on a layer of diazonaphthoquinone/Novolak **resist**, prebaked at 100° for 5 min, imagewise exposed, spray developed using 2-butanone-EtOH mixt., rinsed in iso-PrOH, and O plasma etched.

This formulation was also sensitive to electron-beam exposures. The formulation contg. 5% II exhibited much lower sensitivity than the one contg. I.

IT 104521-87-1  
 RL: USES (Uses)  
 (photoresist contg., for lithog. bilevel resist system)  
 RN 104521-87-1 HCAPLUS  
 CN Silane, (ethenylphenyl)trimethyl-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 97822-60-1  
 CMF C11 H16 Si  
 CCI IDS



D1-CH=CH<sub>2</sub>



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST photoresist bilevel resist system lithog;  
 trimethylsilylmethylstyrene polymer trichlorobenzene  
 diazidodiphenylsulfone photoresist  
 IT **Resists**  
 (photo-, contg. poly(trimethylsilylmethylstyrene) and trichlorobenzene or diazidodiphenylsulfone, or bilevel resist system)  
 IT 120-82-1 75742-13-1  
 RL: USES (Uses)  
 (photoresist contg. poly(trimethylsilylmethylstyrene) and, for bilevel resist system)  
 IT 104521-87-1  
 RL: USES (Uses)  
 (photoresist contg., for lithog. bilevel resist system)  
 L36 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
 1986:488686 Document No. 105:88686 Radiation-sensitive resists  
 . Tanaka, Haruyori; Morita, Masao (Nippon Telegraph and Telephone Public Corp., Japan). Jpn. Kokai Tokkyo Koho JP 60212757 A2  
 19851025 Showa, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-67487 19840406.  
 AB Radiation-sensitive resists are composed of copolymers having the general formula (CH<sub>2</sub>CHR)<sub>m</sub>[CH<sub>2</sub>CR<sub>1</sub>(CO<sub>2</sub>CH<sub>2</sub>R<sub>2</sub>)]<sub>n</sub>(CH<sub>2</sub>CHR<sub>3</sub>)<sub>p</sub>[CH<sub>2</sub>CR<sub>1</sub>(CO<sub>2</sub>CH<sub>2</sub>R<sub>4</sub>)]<sub>q</sub> [R, R<sub>2</sub> = SiMe<sub>2</sub>R<sub>5</sub>, CH<sub>2</sub>SiMe<sub>2</sub>R<sub>5</sub>, CH<sub>2</sub>CH<sub>2</sub>SiMe<sub>2</sub>R<sub>5</sub>, SiMeR<sub>5</sub><sub>2</sub>, SiR<sub>5</sub><sub>3</sub> (R<sub>5</sub> = R<sub>6</sub>C<sub>6</sub>H<sub>4</sub>; R<sub>6</sub> = Cl, I, Br, CH<sub>2</sub>Cl, CH<sub>2</sub>O<sub>2</sub>CCMe:CH<sub>2</sub>); R<sub>1</sub> = H, Me; R<sub>3</sub>, R<sub>4</sub> = SiMe<sub>2</sub>Ph, CH<sub>2</sub>SiMe<sub>2</sub>Ph, CH<sub>2</sub>CH<sub>2</sub>SiMe<sub>2</sub>Ph, SiMePh<sub>2</sub>, SiPh<sub>3</sub>; m, n = 0, pos. integer; m + n → 1; p, q = 0, pos.

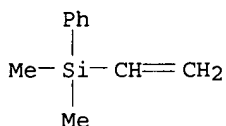


integer]. The **resists** exhibit high sensitivity and provide high-resoln. patterns. Thus, phenyldimethylvinylsilane and (phenyldimethyl)silylmethyl methacrylate were copolymd. in the presence of BuLi, the copolymer chloromethylated by reaction with ClH<sub>2</sub>COMe to obtain a **resist**, coated on a Si wafer, irradiated with an electron beam, and developed with a MeCOEt-2-PrOH (4:1) mixt. to give a **resist** pattern with a sensitivity (the exposure giving 50% thickness loss upon development) of 3  $\mu\text{C}/\text{cm}^2$ .

IT 26744-16-1D, chlorinated or chloromethylated  
 103747-33-7D, chlorinated or chloromethylated  
 RL: USES (Uses)  
 (electron-beam **resist**, for high-resoln. pattern formation)  
 RN 26744-16-1 HCAPLUS  
 CN Silane, ethenyldimethylphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

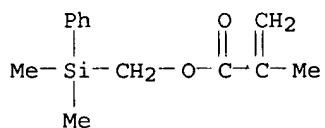
CRN 1125-26-4  
 CMF C10 H14 Si



RN 103747-33-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, (dimethylphenylsilyl)methyl ester, polymer with ethenyldimethylphenylsilane (9CI) (CA INDEX NAME)

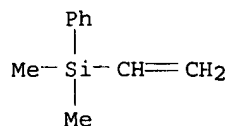
CM 1

CRN 18052-92-1  
 CMF C13 H18 O2 Si



CM 2

CRN 1125-26-4  
 CMF C10 H14 Si



IC ICM G03C001-71  
 ICS C08F030-08; G03C001-00; G03C005-08; G03F007-10  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation **resist** silylalkyl methacrylate copolymer;  
electron **resist** silylalkyl methacrylate copolymer; silicon  
copolymer electron **resist**

IT Vinyl compounds, polymers  
RL: USES (Uses)  
(polymers, silicon-contg., electron-beam **resists** from,  
for high-resoln. patterns)

IT **Resists**  
(electron-beam, silylalkyl methacrylate copolymers and related  
copolymers as, for high-resoln. pattern formation)

IT Acrylic polymers, uses and miscellaneous  
RL: USES (Uses)  
(silicon-contg., electron-beam **resists** from, for  
high-resoln. pattern formation)

IT 79-41-4D, reaction products with chloromethylated  
phenyldimethylsilylmethyl methacrylate polymer or  
poly(phenyldimethylvinylsilane) **26744-16-1D**, chlorinated  
or chloromethylated 71685-30-8D, chlorinated or chloromethylated  
**103747-33-7D**, chlorinated or chloromethylated  
RL: USES (Uses)  
(electron-beam **resist**, for high-resoln. pattern  
formation)

L36 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
1986:131059 Document No. 104:131059 Polymer composition for optical  
parts and applied optical products. Eguchi, Kuniyuki; Okabe,  
Yoshiaki; Tanno, Seikichi; Koyama, Toru; Takeya, Noriaki; Asano,  
Hideki; Wajima, Motoyo (Hitachi, Ltd., Japan). Jpn. Kokai Tokkyo  
Koho JP 60178401 A2 19850912 Showa, 7 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1984-34255 19840227.

AB The title compn. consists mainly of transparent polymer contg. a  
metallic element and Si. Optical parts prepd. from the compn. are  
**resistant** to water, highly transparent, and useful for  
lenses, optical conduits, and optical fibers. Thus, acrylic acid  
24, hydrocinnamic acid 14, and cinnamic acid 7 parts were dissolved  
in benzene contg. 25 parts 2-hydroxyethyl methacrylate and treated  
with 30 parts Ba(OH)2.H2O. The monomer mixt. (40 parts) obtained by  
evapn. was mixed with chlorostyrene 50,  $\gamma$ -  
methacryloyloxypropyltrimethoxysilane 10, and dimyristyl  
peroxydicarbonate 0.3 part and cured in a mold for 4 h at 60°  
and 3 h at 90°. The colorless, transparent product showed  
transmittance 90%, refractive index 1.568, and Abbe no. 43 and was  
not affected by immersion in water at 80° for 8 h and at  
40° for 15 days.

IT **101124-70-3**  
RL: USES (Uses)  
(moldings, transparent, water-**resistant**, for optical  
parts)

RN **101124-70-3** HCAPLUS  
CN Benzenepropanoic acid, polymer with ethenyldimethylphenylsilane,  
ethenylmethylbenzene, 2-hydroxyethyl 2-methyl-2-propenoate,  
3-phenyl-2-propenoic acid and 2-propenoic acid, barium salt (9CI)  
(CA INDEX NAME)

CM 1

CRN 101124-69-0  
CMF (C10 H14 Si C9 H10 O2 . C9 H10 . C9 H8 O2 . C6 H10 O3 . C3 H4  
O2)x  
CCI PMS

CM 2

CRN 25013-15-4  
CMF C9 H10

CCI IDS

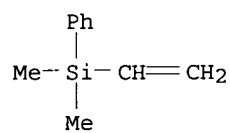


D1-Me

D1-CH=CH<sub>2</sub>

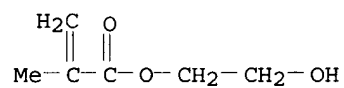
CM 3

CRN 1125-26-4  
CMF C10 H14 Si



CM 4

CRN 868-77-9  
CMF C6 H10 O3



CM 5

CRN 621-82-9  
CMF C9 H8 O2

Ph-CH=CH-CO<sub>2</sub>H

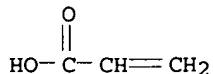
CM 6

CRN 501-52-0  
CMF C9 H10 O2

Ph-CH<sub>2</sub>-CH<sub>2</sub>-CO<sub>2</sub>H

CM 7

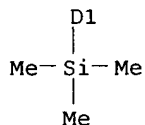
CRN 79-10-7  
CMF C3 H4 O2



IC ICM G02B001-04  
ICS C08F030-08; G02B006-10  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 40  
ST cinnamic acid polymer optical; optical polymer metal silicon;  
acrylic optical polymer; acrylic acid polymer transparency; water  
resistance acrylic polymer  
IT Fiber optics  
(acrylic polymers contg. silyl groups and metal compds.,  
transparent, water-resistant)  
IT Lenses  
Optical materials  
(acrylic polymers contg. silyl groups and metal compds., water-  
resistant)  
IT 101124-68-9 101124-70-3 101124-72-5 101124-74-7  
101124-76-9 101150-88-3  
RL: USES (Uses)  
(moldings, transparent, water-resistant, for optical  
parts),  
L36 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN  
1985:496218 Document No. 103:96218 Silicon-containing **resists**  
for bi-layer **resist** systems. Ohnishi, Y.; Suzuki, M.;  
Saigo, K.; Saotome, Y.; Gokan, H. (Fundam. Res. Lab., NEC Corp.,  
Kawasaki, 213, Japan). Proceedings of SPIE-The International  
Society for Optical Engineering, 539(Adv. Resist Technol. Processing  
2), 62-9 (English) 1985. CODEN: PSISDG. ISSN: 0277-786X.  
AB Several kinds of Si-contg. **resist** materials for bilayer  
**resist** systems were developed. For neg.-working  
**resists**, poly(trimethylsilylstyrene-co-chloromethylstyrene)  
(I) and a mixt. of poly(triallylphenylsilane) with bisazide were  
developed. I was designed for electron-beam or deep-UV exposure.  
For pos.-working **resists** a partly trimethylsilylmethylated  
resorcinol-HCHO resin mixed with naphthoquinonediazide was  
developed. Prepn., lithog. data, and applications to  
bilayer systems of these **resists** are reported.  
IT 97822-61-2  
RL: USES (Uses)  
(**resist**, for bilayer system, lithog.,  
characteristics and prepn. of)  
RN 97822-61-2 HCAPLUS  
CN Silane, (ethenylphenyl)trimethyl-, polymer with  
(chloromethyl)ethenylbenzene (9CI) (CA INDEX NAME)  
CM 1  
CRN 97822-60-1  
CMF C11 H16 Si  
CCI IDS



D1-CH=CH<sub>2</sub>



CM 2

CRN 30030-25-2

CMF C9 H9 Cl

CCI IDS



D1-CH<sub>2</sub>-Cl

D1-CH=CH<sub>2</sub>

- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST silyl group bilayer **resist lithog**; silylstyrene copolymer **lithog resist**
- IT **Resists**  
(silicon-contg., for bilayer systems, prepn. and **lithog** characteristics of)
- IT 81458-15-3  
RL: USES (Uses)  
(bilayer **resist** system contg. silicon-contg. **resist** and)
- IT 95797-43-6  
RL: USES (Uses)  
(**resist** contg. bisazide and, for bilayer system, prepn. and **lithog** characteristics of)
- IT 24969-11-7D, trimethylsilylmethylated  
RL: USES (Uses)  
(**resist** from naphthoquinonediazide and, for bilayer system, prepn. and characteristics of)
- IT 53208-22-3  
RL: USES (Uses)  
(**resist** from partially trimethylsilylmethylated resorcinol-formaldehyde resin contg., for bilayer system, prepn. and characteristics of)
- IT 96361-45-4 **97822-61-2**  
RL: USES (Uses)

(resist, for bilayer system, lithog.  
characteristics and prepn. of)

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